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## <u>Abstract</u>

Methods and systems for generating computer-executable code are provided. Feature diagrams are utilized to help produce deterministic statecharts. Design choices and changes are accomplished by entering modifications to feature diagrams. The feature diagrams are associated with statecharts and as the feature diagrams are modified corresponding changes are made to the associated statecharts, producing deterministic statecharts. Once all the chosen modifications to the feature diagram(s) have been performed, the resulting, newly-created statechart(s) will be deterministic and can be advantageously utilized to generate computer-executable code. Computer-executable code can be generated that is useful for implemented real-time control systems, including real-time systems for controlling semiconductor equipment.

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